Recombinant Mouse NPRC/NPR3 Fc Chimera

Catalog Number: 10187-NR

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived mouse NPRC/NPR3 protein

Mouse NPRC/NPR3 (Glu41-Ala478) Accession # P70180	IEGRMDP	Mouse IgG_{2a} (Glu98-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Glu41
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	78 kDa

SPECIFICATIONS

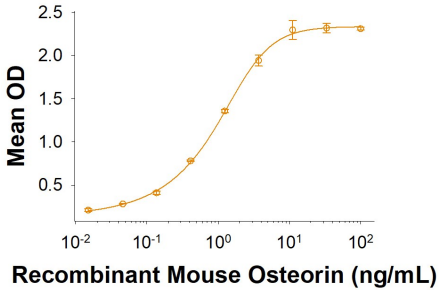
SDS-PAGE	76-96 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Mouse NPRC/NPR3 Fc Chimera is immobilized at 2 µg/mL (100 µL/well), the concentration of Recombinant Mouse Osteocrin (Catalog # 9700-ON) that produces 50% of the optimal binding response is 0.6-3.6 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

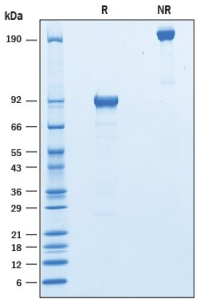
DATA

Binding Activity



When Recombinant Mouse NPRC/NPR3 Fc Chimera (Catalog # 10187-NR) is immobilized at 2 µg/mL, 100 µL/well, Recombinant Mouse Osteocrin (Catalog # 9700-ON) binds with an ED_{50} of 0.6-3.6 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Mouse INPRC/NPR3 Fc Chimera was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® blue staining, showing bands at 76-96 kDa and 170-200 kDa, respectively.

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BACKGROUND

Atrial Natriuretic Peptide Receptor-3 (NPR3), also known as NPR-C or ANPR-C, is one of the three natriuretic peptide receptors (1, 2). Mouse NPR3 is a type I transmembrane glycoprotein that contains a 438 amino acid (aa) extracellular domain (ECD), a 21 aa transmembrane segment, and a 37 aa cytoplasmic region. The natriuretic system is key to the maintenance of vascular tone and cardiovascular homeostasis. It consists of three related natriuretic peptides: atrial natriuretic peptide (ANP), brain natriuretic peptide (BNP), and C-type natriuretic peptide (CNP). It also consists of three single-membrane-spanning receptors (NPRs) to mediate the biological activity of these peptides: NPR1, NPR2, and NPR3. NPR1 and NPR2 are guanylyl cyclase receptors that regulate cGMP levels, while NPR3 lacks enzymatic activity and may act as a clearance receptor (1, 2). Both ANP and BNP exhibit high binding affinities to NPR1 and NPR3, while CNP binds with high affinity to NPR2 and NPR3 (2). NPR3 is known to be expressed in the heart, lung, adrenal gland, heart, cerebral cortex, cerebellum, liver and adipocytes and in some cancers (1, 2). Osteocrin was found to be a specific ligand to NPR3 (3). NPR3 is necessary for Osteocrin to regulate femoral, tibial, and metatarsal bone elongation (4).

References:

1. Potter, L.R. *et al.* (2006) Endocr. Rev. **27**:47.
2. Koller, K. J. and D. V. Goeddel (1992) Circulation **86**:1081.
3. Thomas, G. *et al.* (2003) J. Biol. Chem. **278**:50563.
4. Moffatt, P. *et al.* (2007) J. Biol. Chem. **282**:36454.

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